

WHAT IS CLAIMED IS:

Subs a1 } 1. A method for providing protection for connectionless signals in a telecommunications network comprising a plurality of nodes, the method comprising:

generating a first protection path from each of the nodes to a destination node;

generating a second protection path from each of the nodes to the destination node, the second protection path distinct from the first protection path; and

10 routing protection traffic along one of the protection paths to the destination node.

2. The method of Claim 1, generating the first protection path and generating the second protection path  
15 each comprising decomposing the telecommunications network.

Subs a1 } 3. The method of Claim 2, decomposing the telecommunications network comprising decomposing the telecommunications network into a ring.  
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4. The method of Claim 3, decomposing the telecommunications further comprising decomposing the telecommunications network into at least one ear.

25 5. The method of Claim 4, decomposing the telecommunications network further comprising charting the ring horizontally beginning with the destination node and ending with the destination node.

6. The method of Claim 5, decomposing the telecommunications network further comprising ordering the ears and charting the ears horizontally based on the order of the ears.

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7. The method of Claim 6, generating the first protection path further comprising generating the first protection path in a first direction based on the charted ring and ears and generating the second protection path  
10 further comprising generating the second protection path in a second direction based on the charted ring and ears.

8. The method of Claim 1, further comprising:  
classifying received traffic as working traffic  
15 or protection traffic; and  
routing protection traffic comprising routing protection traffic based on the classification of the received traffic as working traffic or protection traffic.

9. The method of Claim 8, routing protection traffic further comprising routing along the first protection path the protection traffic received on the first protection path and routing along the second protection path the protection traffic received on the second protection path.

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10. The method of Claim 9, further comprising:  
determining which of the first and second  
protection paths to the destination node comprises a  
shorter path; and

5 routing received working traffic as protection  
traffic onto the protection path comprising the shorter  
path.

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11. A node in a telecommunications network,  
comprising:

at least two ports, each port operable to receive  
and transmit traffic for the node; and

5 a protection egress port identifier operable to  
identify one of the ports as a protection egress port for  
a specified ingress port and a specified destination node,  
the protection egress port operable to transmit protection  
traffic received at the specified ingress port for the  
10 specified destination node.

12. The node of Claim 11, further comprising an  
egress port evaluator operable to evaluate a status for  
each of the ports.

15 13. The node of Claim 12, further comprising an  
egress port selector operable to select an egress port for  
transmitting traffic for the node.

20 14. The node of Claim 13, the egress port selector  
further operable to discard protection traffic received at  
the specified ingress port for the specified destination  
node when a status for the protection egress port comprises  
unavailable.

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15. The node of Claim 13, further comprising a working traffic egress port identifier operable to identify one of the ports as a working traffic egress port for a specified ingress port and a specified destination node,  
5 the working traffic egress port operable to transmit working traffic received at the specified ingress port for the specified destination node.

16. The node of Claim 15, further comprising a  
10 secondary protection egress port identifier operable to identify one of the ports as a secondary protection egress port for a specified destination node, the secondary protection egress port operable to transmit as protection traffic the working traffic received at the node for the  
15 specified destination node.

17. The node of Claim 16, further comprising a traffic classifier operable to classify received traffic as working traffic or protection traffic.  
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18. The node of Claim 17, the egress port selector operable to select an egress port for transmitting traffic for the node based on the classification of the received traffic as working traffic or protection traffic and based  
25 on the status for the egress ports.

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19. A system for providing protection for connectionless signals in a telecommunications network comprising a plurality of nodes, the system comprising:

5 a plurality of nodes operable to receive and to transmit connectionless signals, the plurality of nodes comprising a destination node;

a first protection path from each of the nodes to the destination node;

10 a second protection path from each of the nodes to the destination node, the second protection path distinct from the first protection path; and

each of the nodes operable to transmit protection traffic for the destination node along the first protection path and along the second protection path.

15 20. The system of Claim 19, the plurality of nodes operable to be decomposed into a ring.

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20 21. The system of Claim 20, the plurality of nodes further operable to be decomposed into at least one ear.

22. The system of Claim 19, each of the nodes comprising at least two ports, each port operable to receive and transmit traffic for the node, and a protection egress port identifier operable to identify one of the  
25 ports as a protection egress port for a specified ingress port and a specified destination node, the protection egress port operable to transmit protection traffic received at the specified ingress port for the specified  
30 destination node.

23. The system of Claim 22, each of the nodes further comprising an egress port evaluator operable to evaluate a status for each of the ports.

5           24. The system of Claim 23, each of the nodes further comprising an egress port selector operable to select an egress port for transmitting traffic for the node.

10           25. The system of Claim 24, the egress port selector further operable to discard protection traffic received at the specified ingress port for the specified destination node when a status for the protection egress port comprises unavailable.

15           26. The system of Claim 24, each of the nodes further comprising a working traffic egress port identifier operable to identify one of the ports as a working traffic egress port for a specified ingress port and a specified destination node, the working traffic egress port operable  
20 to transmit working traffic received at the specified ingress port for the specified destination node.

25           27. The system of Claim 26, each of the nodes further comprising a secondary protection egress port identifier operable to identify one of the ports as a secondary protection egress port for a specified destination node, the secondary protection egress port operable to transmit as protection traffic the working traffic received at the node for the specified destination node.

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28. The system of Claim 27, each of the nodes further comprising a traffic classifier operable to classify received traffic as working traffic or protection traffic.

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29. The system of Claim 28, the egress port selector operable to select an egress port for transmitting traffic for the node based on the classification of the received traffic as working traffic or protection traffic and based on the status for the egress ports.

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30. A method for reserving bandwidth for connectionless signals processed by a central node in a telecommunications network comprising a plurality of nodes, the method comprising:

5 identifying a plurality of peripheral nodes from which the central node receives traffic;

for each of the peripheral nodes, determining a working bandwidth for the central node based on working traffic from the peripheral node;

10 for each of the peripheral nodes, determining a protection bandwidth for the central node based on protection traffic from the peripheral node; and

for each of the peripheral nodes, reserving additional bandwidth for the central node when the  
15 protection bandwidth for the central node based on the peripheral node is greater than the working bandwidth for the central node based on the peripheral node.

31. The method of Claim 30, further comprising, for  
20 each of the peripheral nodes, reserving no additional bandwidth for the central node when the protection bandwidth for the central node based on the peripheral node is less than or equal to the working bandwidth for the central node based on the peripheral node.

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32. The method of Claim 30, reserving additional bandwidth for the central node comprising reserving an additional amount of bandwidth corresponding to the difference between the protection bandwidth for the central  
30 node based on the peripheral node and the working bandwidth for the central node based on the peripheral node.